

The Discrimination of Screen Pre-frailty for Community-Dwelling Elderly People

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Purpose

The purpose of this presentation is to analyze the risk factors and cut-off point of a short battery of physical performance tests for identifying community-dwelling elderly people with pre-frailty.

Methods

Stage I: Questionnaire collection

- The demographic data included age, gender, living alone or not, body mass index, waist measurement, fall history, marital status, education level, alcohol use, comorbidities, blood pressure, and heart rate.
- The measurement of pre-frailty (Fried et al., 2001a) is a proposed composite variable and has already been applied in many large national epidemiological studies. It is based on the following five indicators:
 - (a) Weight loss
 - (b) Weakness
 - (c) Exhaustion
 - (d) Slow responses
 - (e) Minimal physical activity.

Stage II: Physical performance measurement protocol for elderly people

A short battery of physical performance tests was employed at community activity center to assess the following characteristics among elderly people: balance, mobility, and flexibility.

- (1) Eight-foot up-and-go test
- (2) Thirty-second chair stand test
- (3) Back scratch flexibility test

Conclusions

- The findings offer reference values for physical performance tests specific to community-dwelling pre-frail elderly people. In addition, health care professionals could use this objective cut-off point to detect pre-frailty at an early stage.
- Through appropriate and comprehensive care intervention plans that include regular exercise (particularly resistance exercise) and nutritional supplements, the following outcomes may be achieved: improved muscle mass, muscle strength, and dynamic balance; increased metabolic rates; enhanced exercise tolerance and mobility; and increased bone mineral density.

Results

Table 1. The Association Between Characteristic and Test Score with Pre-frailty

Predictor	OR	95% CI of OR	P
Model 1			
Fall in one year	3.05	1.46 – 6.38	0.003
Smoking	3.22	1.40 – 7.38	0.006
Hypertension	2.21	1.16 – 4.21	0.016
Bone-related disease	8.96	3.05 – 26.30	<0.001
Model 2‡			
Grip of right hand, kg	0.96	0.92 – 0.99	0.021
Grip of left hand, kg	0.92	0.87 – 0.97	0.001
Back scratch flexibility test (right), cm	0.98	0.96 – 1.00	0.106
Back scratch flexibility test (left), cm	0.99	0.97 – 1.01	0.154
Eight foot up and go test, second	1.15	1.04 – 1.27	0.005
Thirty seconds chair rise test, time	0.95	0.88 – 1.02	0.140

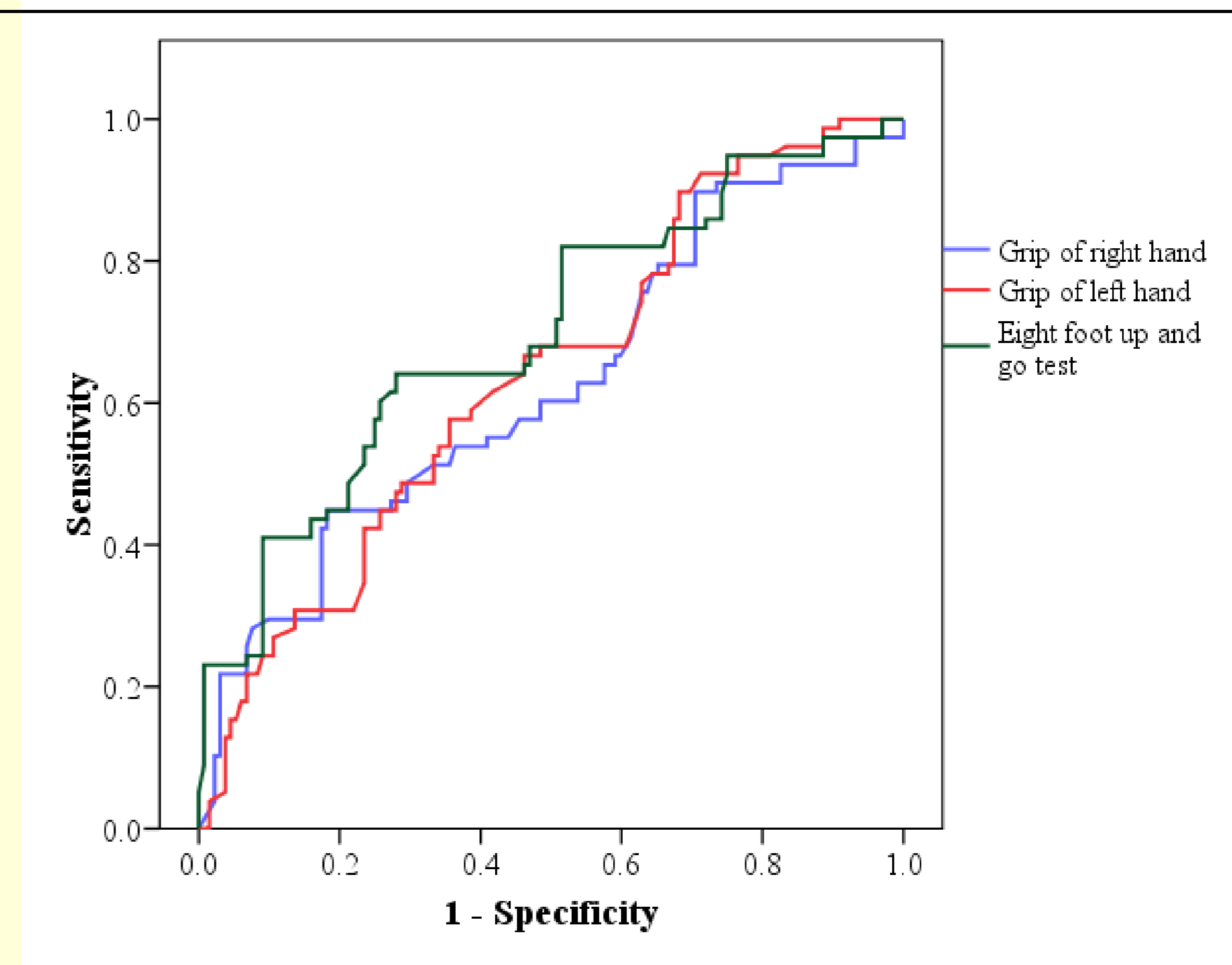


Figure 1. ROC Curve Analysis for Test Performance in Discriminating Non-Pre-frail and Pre-frail